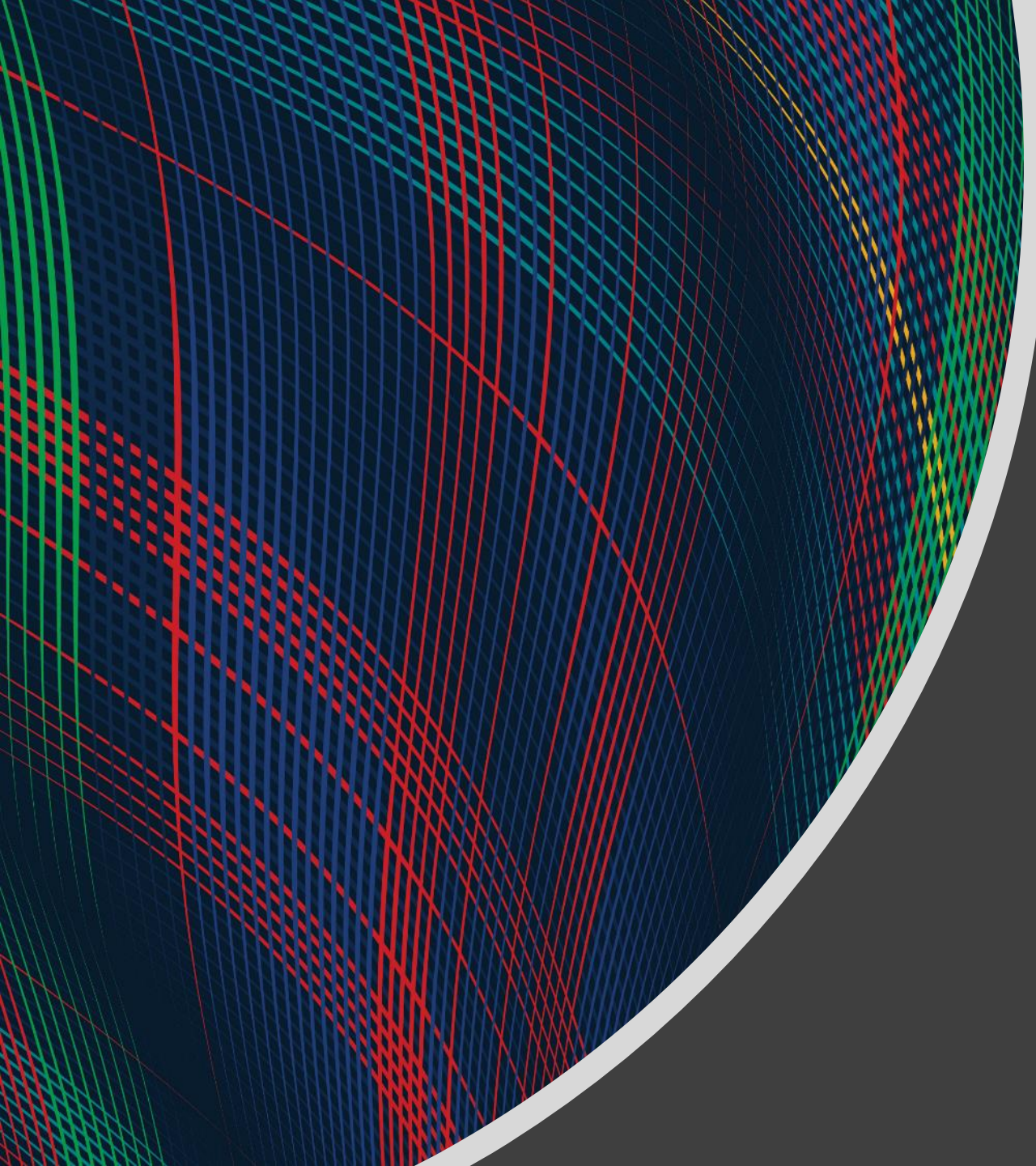


An abstract graphic on the left side of the slide, featuring a sphere-like shape composed of a dense grid of intersecting red, green, and blue lines. The lines are curved and follow the contour of the sphere, creating a complex, woven pattern. The sphere is set against a dark gray background.

Demystifying AI

Data and ML Models

Instructor: Pat Virtue

Exercise 1: Input Output Prediction

Learn from training data input and output to predict test output

- Fill in Predicted Output for each test data input

Exercise 2: Input Output Prediction

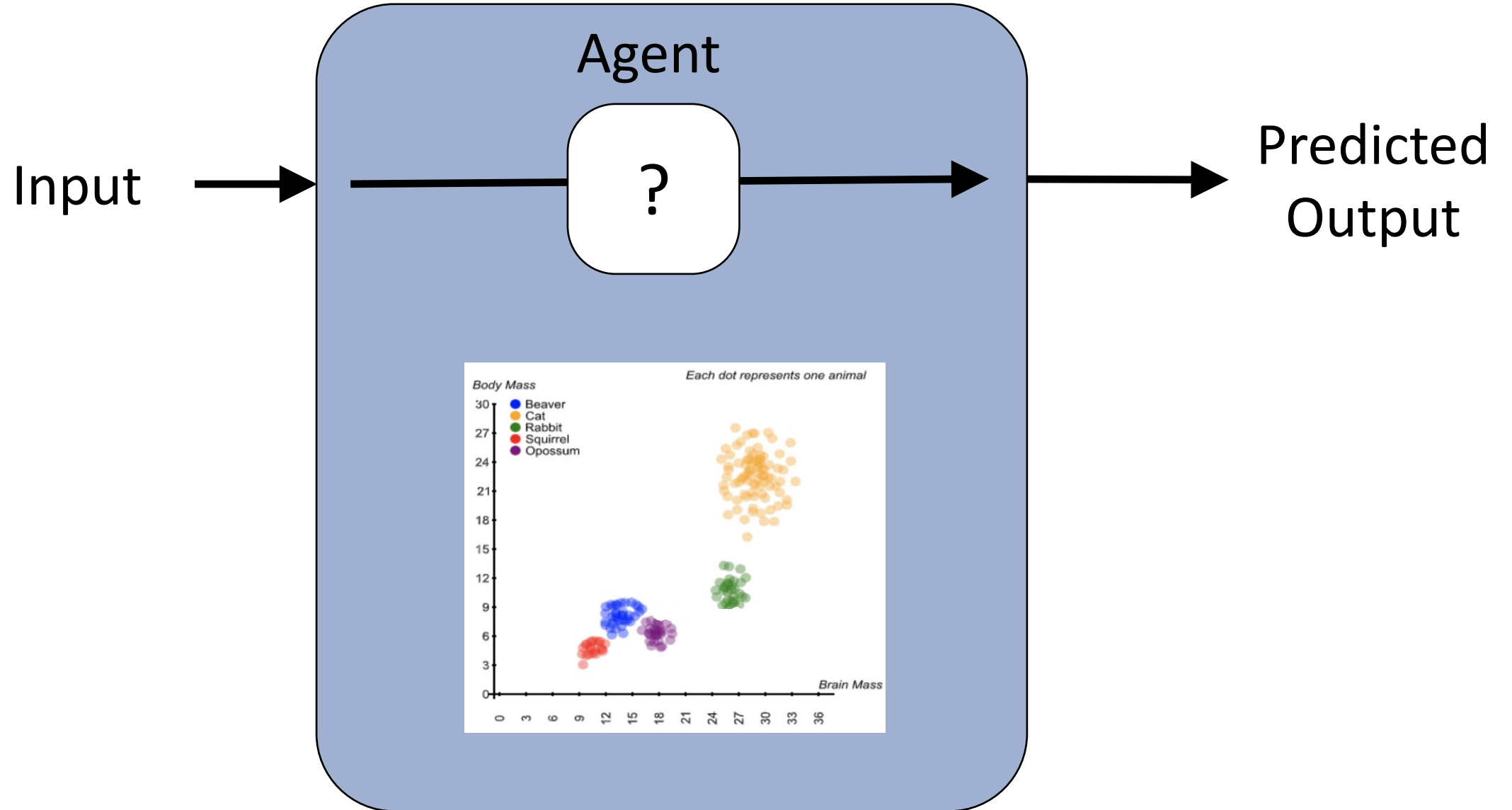
Learn from training data input and output to predict test output

- Fill in Predicted Output for each test data input

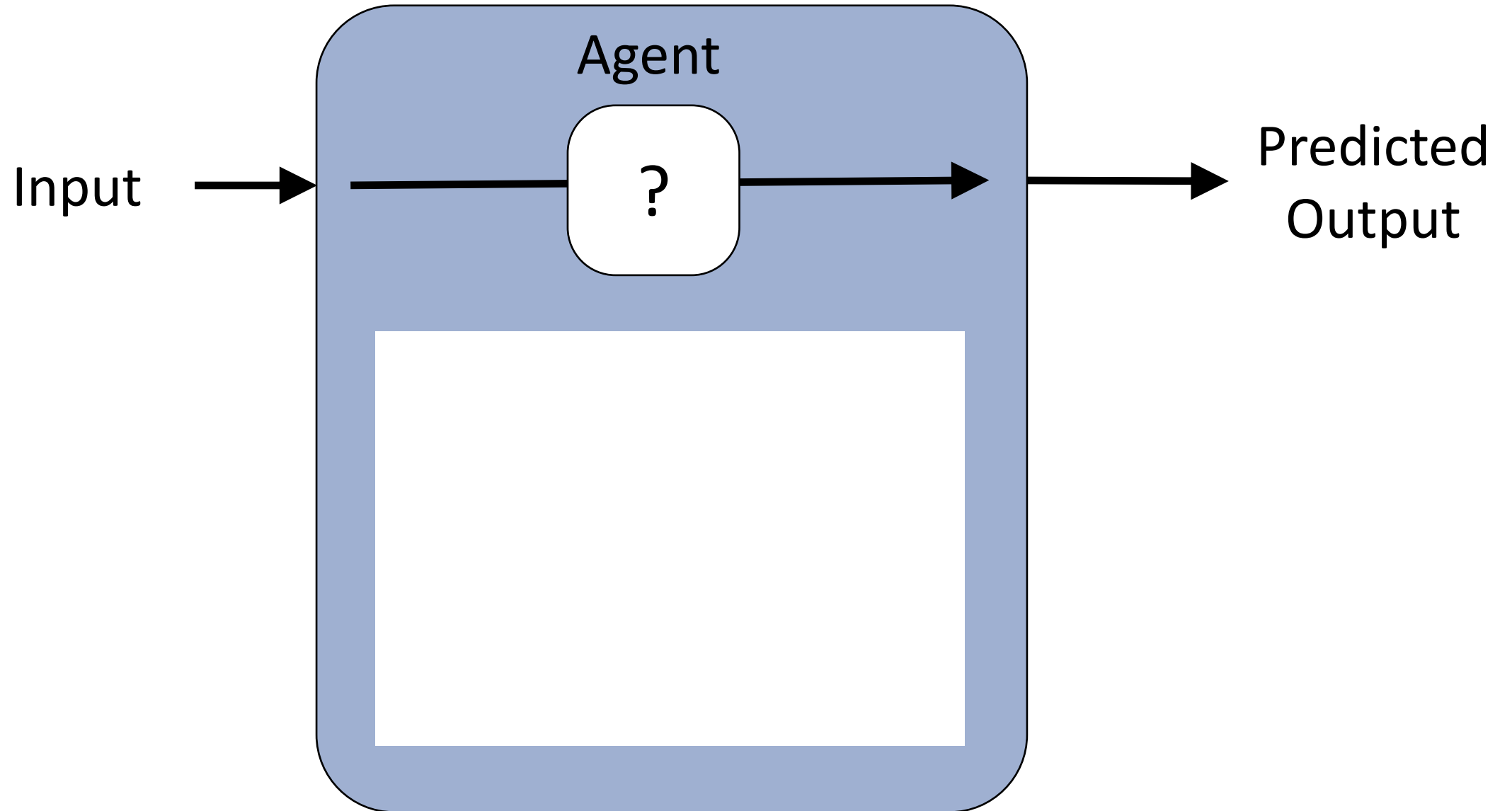
Using the same method that you used to predict the test data output

- Fill in Predicted Output for each train data input

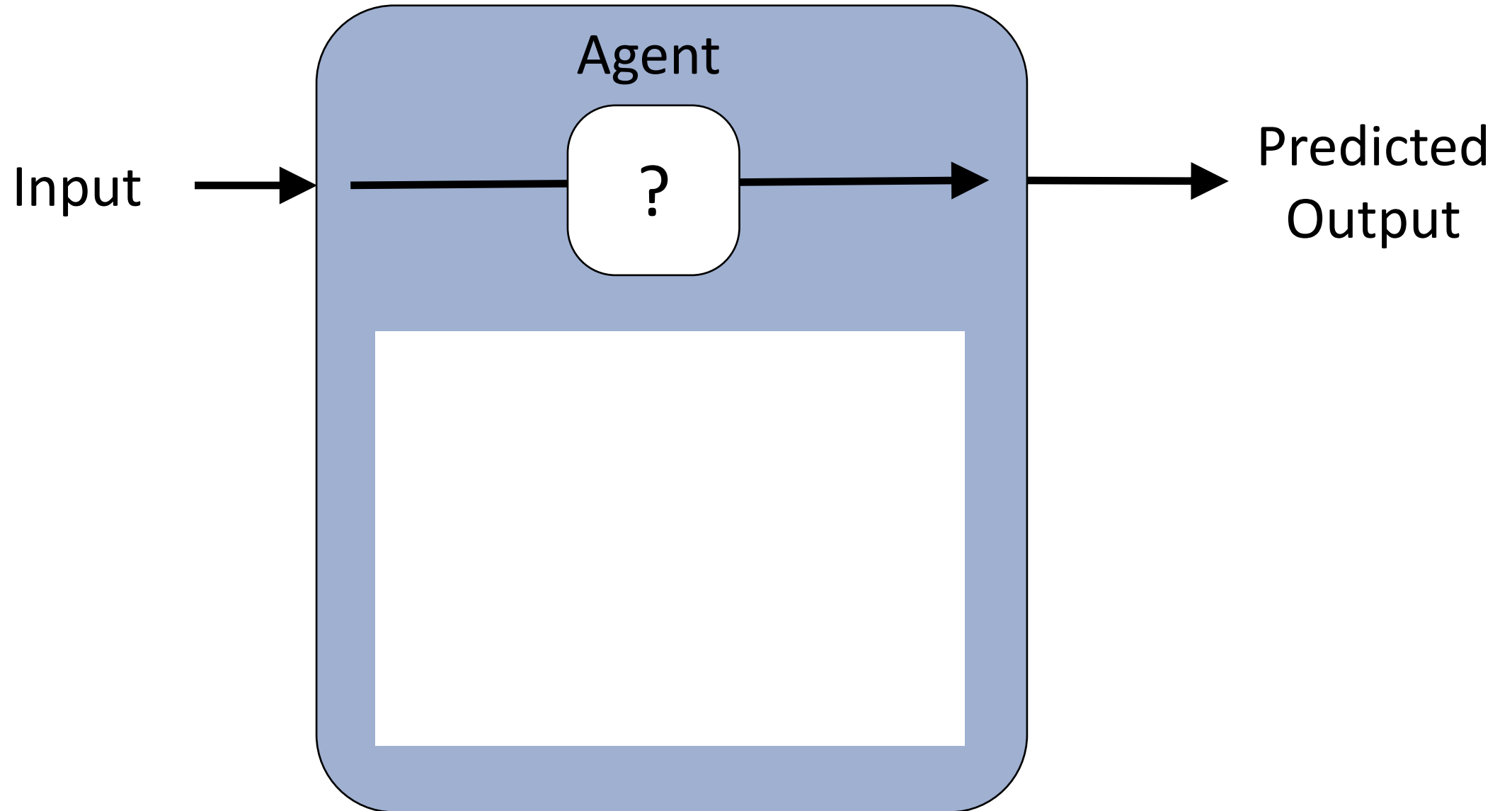
Agent Uses Data to Make Decisions



Agent Uses Data to Make Decisions



Agent Uses Data to Make Decisions



Machine Learning

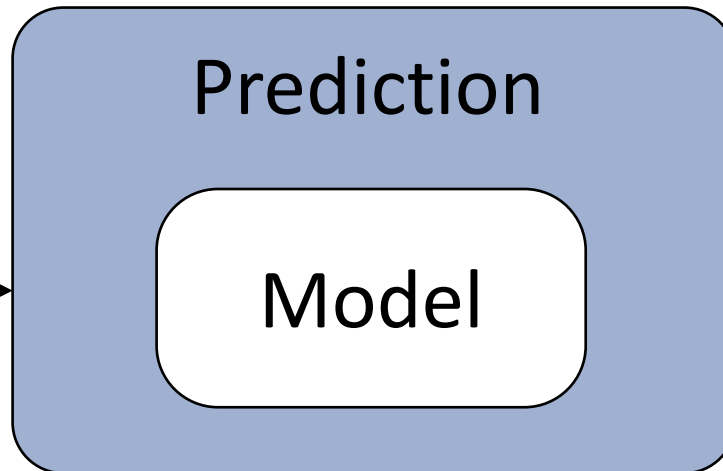
Using (training) data to learn a model that we'll later use for prediction

Training Data
Input and
Measured Output



Model
Structure and
Parameters

Input



Predicted
Output

Machine Learning

Using (training) data to learn a model that we'll later use for prediction

Training Data

Input:

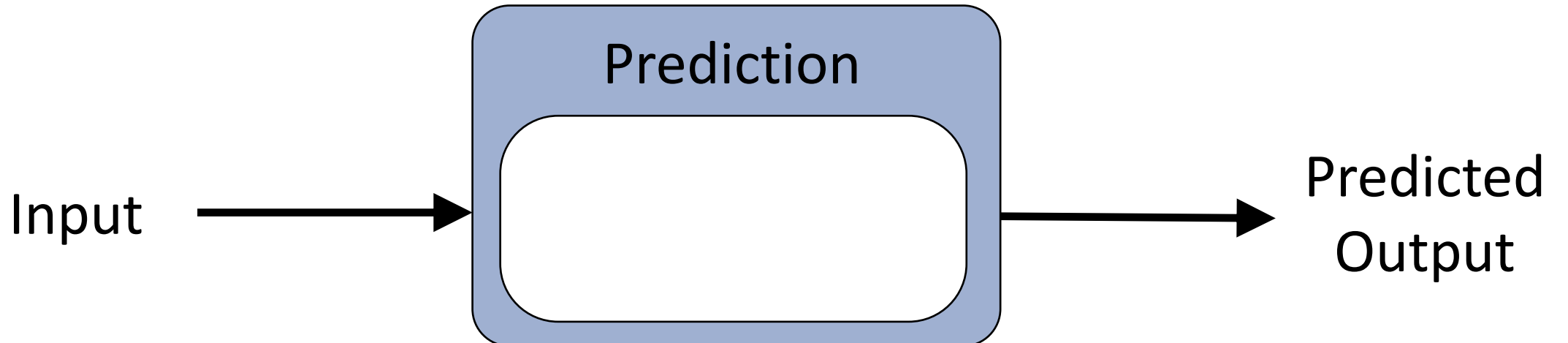
Output:



Model

Structure:

Parameters:



Vocab

Data: Numerical Values

More input measurements

Label	Width	Height	Length	Weight	Brain	Life expectancy
3	3.95	12.79	10.45	0.899	4.89	8.25
2	4.21	12.71	10.83	11.66	9.09	5.92
2	3	13.88	11.41	10.21	14.78	5.42
3	4.79	12.71	10.76	0.885	8.73	10.72
3	5.09	15.4	7.68	1.143	13.95	8.54
3	4.92	8.96	8.91	1.1	11.25	9.13
0	9.85	12.78	4.04	11.1	10.71	11.19
4	5.48	8.81	10.09	9.22	6.18	4.88
⋮	⋮	⋮	⋮	⋮	⋮	⋮

Data: Numerical Values

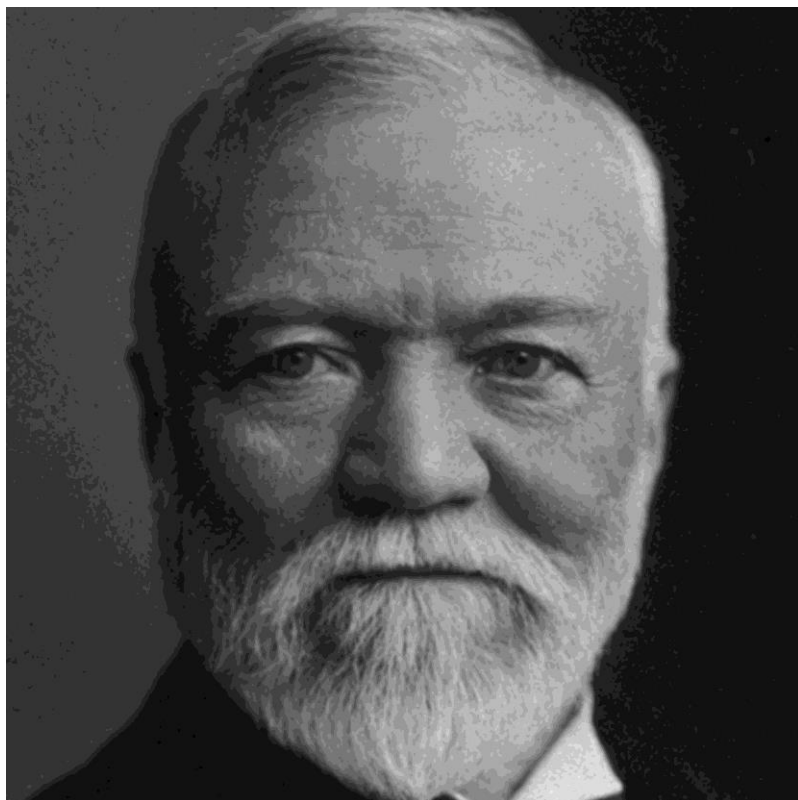
Converting more complex data into a table of numerical values

- Images (and video)
- Language (words, sentences, books)
- Audio signals (music, speech)

Data: Numerical Values

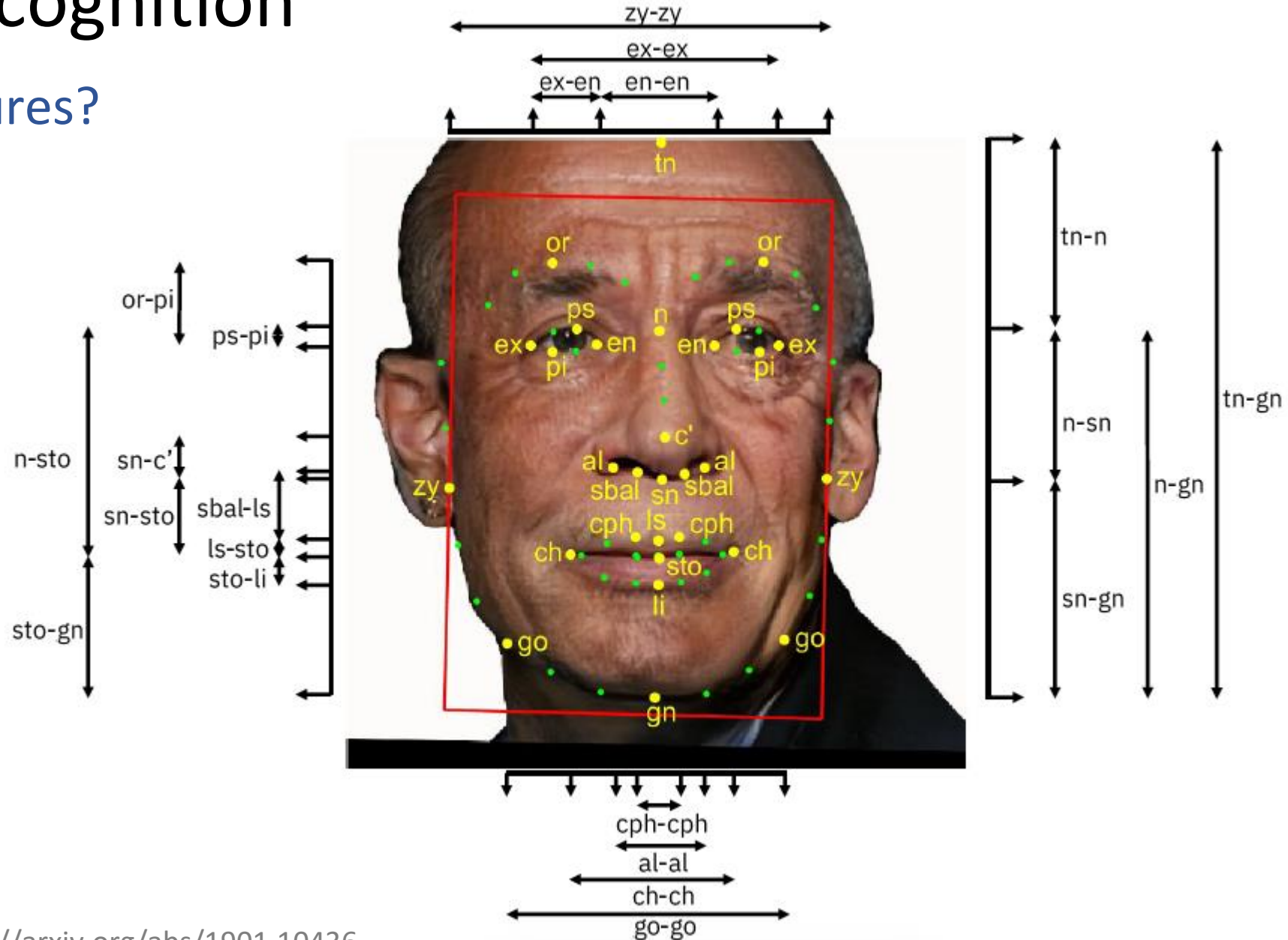
Converting more complex data into a table of numerical values

Task: Face recognition from image



Face Recognition

Input Features?



Face Recognition

Input Features?



Face Recognition

Input Features?



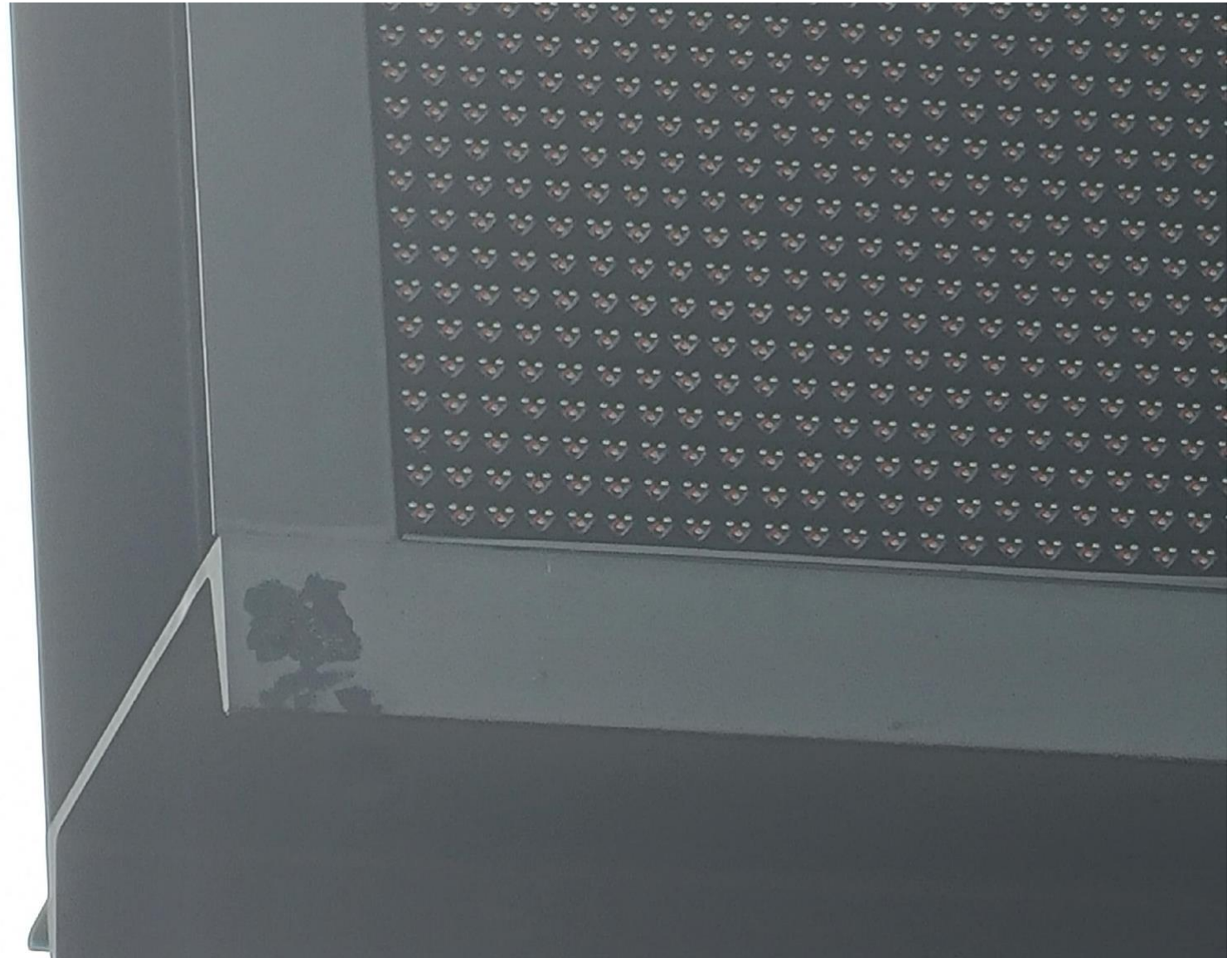
Face Recognition

Input Features?



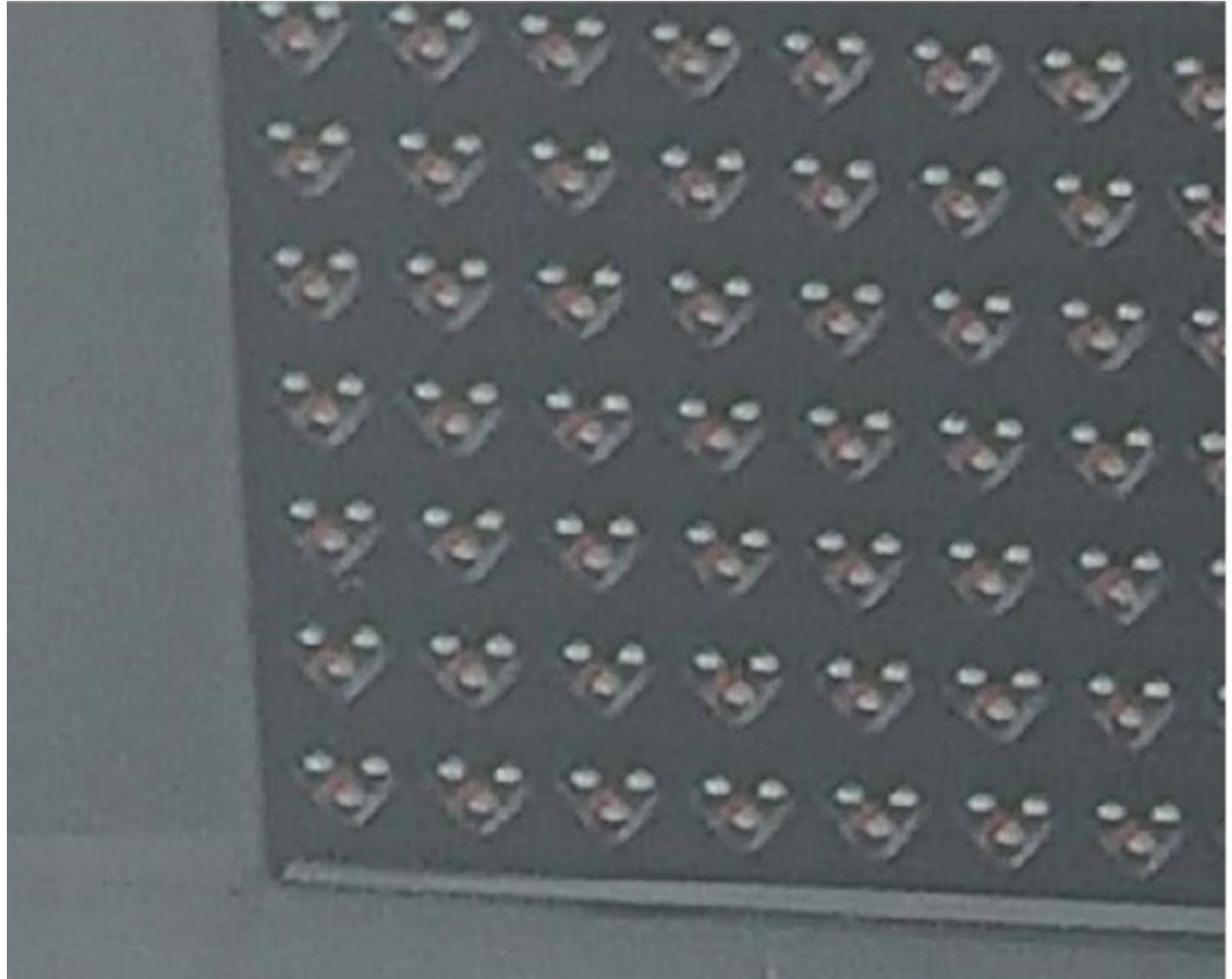
Face Recognition

Input Features?



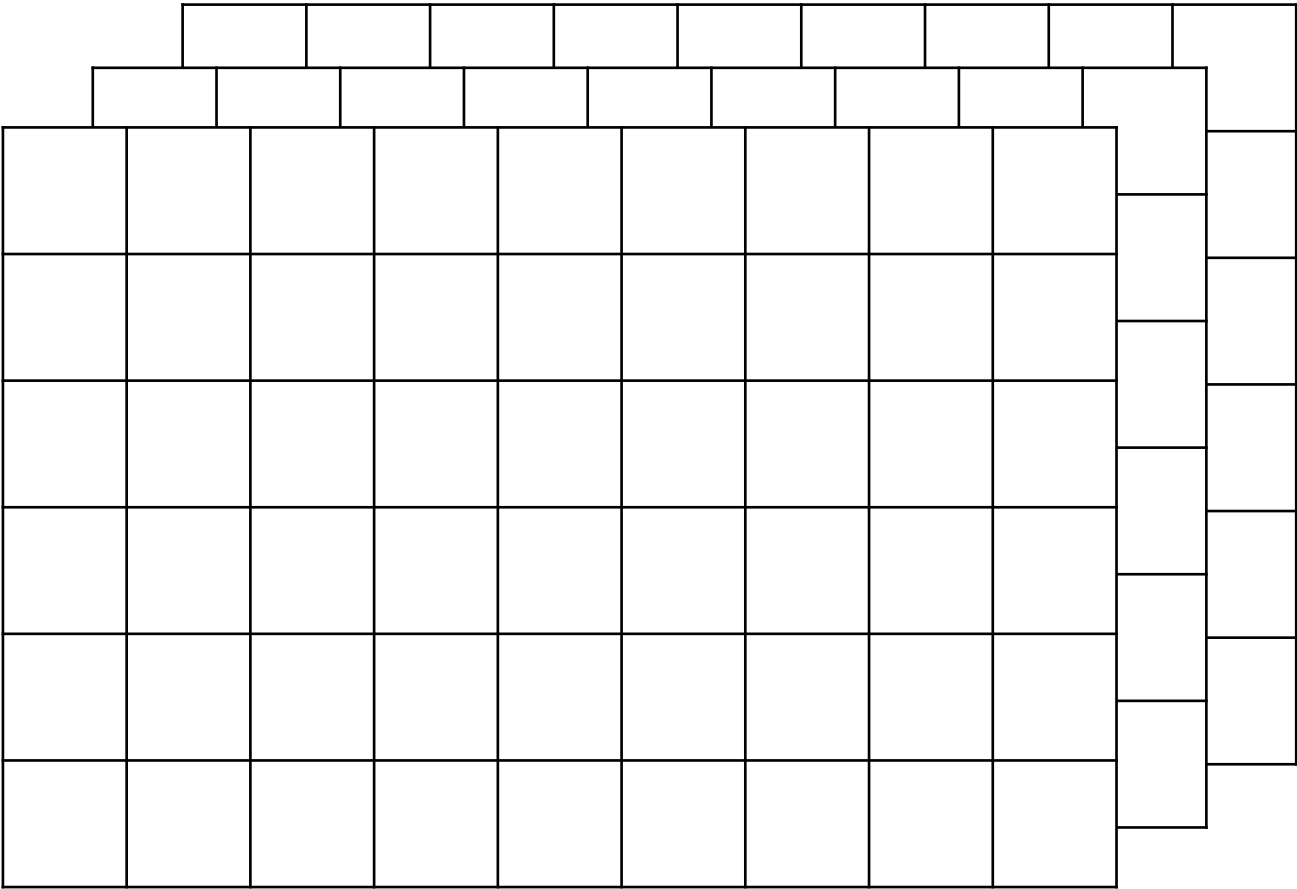
Face Recognition

Input Features?



Face Recognition

Input Features?



Data: Numerical Values

Converting more complex data into a table of numerical values

Task: SPAM classification from email (body) text

Data: Numerical Values

Converting more complex data into a table of numerical values

Task: SPAM classification from email (body) text

Reminder: Machine Learning

Using (training) data to learn a model that we'll later use for prediction

